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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,370	10/30/2000	Kristina Schmidt	F6689	6987

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Jordan and Hamburg
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New York, NY 10168

EXAMINER
QUAN, ELIZABETH S

ART UNIT	PAPER NUMBER
1743	5

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-5

Office Action Summary	Application No. 09/674,370	Applicant(s) SCHMIDT ET AL.	
	Examiner Elizabeth Quan	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the corr spondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 October 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

2. The drawings are objected to because there are two different names for reference character 2, including body and support plate. It is unclear what the arrows are pointing to. It is unclear how the liquid supply means are connected with the capillary gap. The reference character labels can be confusing with body or support plate (2), body (1), and plate support (1), etc. It seems as if the cover plate (23) is the same as body (2). It appears from the drawings that elevation (22) is a solid slab underneath body (2) while the specification states that a capillary gap (4) is formed from the elevation (22). There is question of whether elevation (22) simply describes the space between the recesses (21) that is not touching the body (1) or plane supporting plate (11) to form the capillary gap (4) or there is a slab residing in the capillary gap (4). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the spacing means (5) and spacing means (5) as regularly distributed bars must be shown or the feature(s) canceled from the claim(s). While the drawings is labeled with a reference character (5), the specification on page 5, lines 11-14 says that the spacing means (5) is not "specially shown." It could explain why spacing means (5) appears to be a wall or part of the body (2). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The abstract of the disclosure is objected to because "of this type" should be omitted from the second line. The BRIEF DESCRIPTION OF DRAWINGS has been misplaced in the DETAILED DESCRIPTION OF DRAWINGS. Correction is required. See MPEP § 608.01(b).

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Content of Specification

(a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.

(b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.

(c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

(d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

(e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."

(2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."

(f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

(h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication, which adequately describes the subject matter.

(i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).

(j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application, which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

(k) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

5. The attempt to incorporate subject matter into this application by reference to the claims is improper because the claims are subject to change. The purpose of the specification is to provide support for the claims. The claims draw information from the specification.

6. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms, which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: elevation, convexly, plane, continuous bar, regularly distributed bar, and stripes.

7. The disclosure is objected to because of the following informalities: The specification contains many unclear and awkward terms. There are run-on sentences and other awkward sentence structures. It appears the specification was translated. For example, on page 4, line 17 the description of "the body 2 is also plane before the recesses 21 are inserted" is awkward. On page 4, line 18, the term "convexly" is not known by Merriam-Webster's Collegiate Dictionary. On page 6, line 4 "inventional" should be omitted. On page 7, line 22, the description of the plates "plane, planar, substrate" is redundant and awkward. Applicant is required to correct these and similar errors.

Appropriate correction is required.

8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: continuous bars, which are apparently termed through bars in the claims.

9. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

10. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 1 and 3-17 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It appears from the drawings that elevation (22) is a solid slab underneath body (2) while the specification states that a capillary gap (4) is formed from the elevation (22) as continuous bars. There is question of whether elevation (22) simply describes the space between the recesses (21) that is not touching the body (1) or plane supporting plate (11) to form the capillary gap (4) or there is a slab residing in the capillary gap (4). The specification describes the elevations (22) forming the capillary gap (4) are designed as continuous bars. Are these continuous bars hollow? If there is a slab, does the slab extend the height of the spaces between the recesses such that spacer elements are needed? It is unclear how the elevation forms the capillary gap. It is unclear exactly what is the means for spacing apart. Doesn't the entire body (2) separate cover plate (23) from body (1) or plane supporting plate (11)? In claim 1,

transporting liquid "exclusively" by capillary forces is not supported by the specification. How is the attachment of the plates free of tensions in different directions? The specification did not discuss any route associated with the elevations. Referring to claim 17, it is unclear how the device works when a microtiter plate is used.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

14. Claims 1 and 3-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

15. Claim 1 recites the limitation "the structures" in the second line. There is insufficient antecedent basis for this limitation in the claim.

16. Referring to claim 1, the term "elevation" renders the claim indefinite. Elevation could be interpreted as the space between the recesses just as long it protrudes from the base of the recesses.

17. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the connection between the liquid supply means with the means for spacing apart, elevations, capillary gaps, and recesses. It is unclear how liquid is provided to the capillary gaps by the liquid supply means.

18. Referring to claim 1, it is unclear whether "1,5000 um" should be "1,500 um" or "15,000 um."

19. Referring to claim 1, it is unclear what area is defined by "in the range of the recesses."

20. Referring to claim 1, how can the liquid supply means be adapted to be dosed?

21. Referring to claim 4, how is the body (2) with elevations and recesses formed by a plane cover plate (23)? Isn't the body (2) the same as the cover plate (23)?

22. Referring to claim 5, isn't the opposite body (1) the same as the plane support plate (11)?

23. Referring to claims 7-10, 12, 13, "characterized in that" should probably be "wherein."

24. Referring to claim 8, it is unclear what regularly distributed bars means.

25. Referring to claim 9, "preselectably defined" should be omitted. It is unclear how the defined height of the spacer elements depends on the fluid to be directed along the capillary gap.

26. Referring to claim 10, it is unclear what constitutes a through bar. Is the capillary gap in the form of a bar? The term "designed" does not positively recite.

27. Referring to claim 11, the term "attached...detachably" is awkward and contradictory. The term "adapted" has been interpreted as "fit for." It is unclear how the attachment of the plates is free of tensions in different directions.

28. Referring to claim 13, it is unclear from the drawings how the capillary gaps are connected. Is it connected by the spaces in between the gaps? Examiner has referred to the drawings for connection of gaps.

29. Referring to claim 14, it is unclear what this claim is getting at. The specification did not discuss any route associated with the elevations. How can elevations have a route?

30. Claims 15-17 recite the limitation "the support plate". Base claims have not recited a plurality of support plates. Are both body (1) and (2) now the same thing? There is insufficient antecedent basis for this limitation in the claim.

31. Referring to claims 5, 6, 11, 14-17, the reference to support plates can be quite confusing when body (1) and (2) has both been referred to as support plate in the specification. Is the claim referring to one or both of the bodies?

Claim Rejections - 35 USC § 103

32. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

33. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

34. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

35. Claims 1, 4-8, and 10-15 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,512,131 to Kumar et al. in view of U.S. Patent No. 4,233,029 to Columbus.

Referring to claim 1, 4-8, and 10-15, Kumar discloses a device that could be used for transporting liquids along predetermined guideways provided in a body or cover plate (20) (see FIG. 1a). The structures (28) forming the liquid guideways are attached to a corresponding complementarily shaped opposite body (34) (see FIG. 1a). The body or cover plate (20) is provided with spacing means surrounding and spaced by the recesses (24) and elevations (26), which form independent capillary gaps each with an inlet and outlet (see FIG. 1a). Kumar et al. do not address the width and depth of the recess. Columbus discloses that that the preferred range for the width of the recesses is 5-5000 microns (see COL. 11, lines 66-68). Columbus also discloses that a separation distance, which is analogous to the depth of the recesses, greater than 600 microns between body or cover plate (20) and opposite body (30) would destroy capillary action as necessary to prevent flow within the recess while maintaining flow in the guideways (see COL. 11, lines 52-65). The ideal combination of the width and depth of the recesses would offer better control over capillary flow of liquid along predetermined paths along the structures forming the liquid guideways rather than the whole of the recesses, ensuring predictable and controlled flow rates in defined areas (see COL. 1, lines 58-68; COL. 2, lines 1-45). Columbus also discloses the structural limitations of claims 1, 4-8, 10-15. Columbus discloses a liquid supply means. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kumar et al. to provide a device with a width of at least 1000 microns and depth of at least 1500

microns as in Columbus given the diverse range of widths and depths as well as to better control capillary flow of liquid along predetermined paths with predictable and controlled flow rates in defined areas. Applicant is reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim.

36. Claims 1, 3-8, and 10-15 rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/33737 to Kim et al. in view of U.S. Patent No. 4,233,029 to Columbus.

Referring to claims 1, 3-8, 10-12, 14, and 15, Kim et al. disclose a device for transporting liquids along predetermined guideways provided in a body or cover plate (20) (see FIG. 1). The structures (38) forming the liquid guideways (34) are attached to a corresponding complementarily shaped opposite body (30) (see FIG. 1). The body or cover plate (20) is provided with spacing means (26) surrounding and spaced by the recesses (24) and elevations (26), which form independent capillary gaps (32) each with an inlet and outlet for transporting liquids by capillary forces (see FIG. 1; PAGE 11, line 31; PAGE 12, lines 1-5; PAGE 24, lines 29-31; PAGE 25, line 1). Since a fluid that is precursor of a patterned, polymeric structure is placed adjacent one or more openings of channels (32), there is inherently a liquid supply means whether it be a container or pipette (see PAGE 11, lines 24-31; PAGE 12, lines 1-18; PAGE 13, line 31; PAGE 14, lines 1-31; PAGE 15, lines 1-31; PAGE 16, lines 1-30; PAGE 20, lines 30 and 31; PAGE 21, lines 1-21). Kim et al. do not address the width and depth of the recess.

Columbus discloses that that the preferred range for the width of the recesses is 5-5000 microns (see COL. 11, lines 66-68). Columbus also discloses that a separation distance, which is analogous to the depth of the recesses, greater than 600 microns between body or cover plate (20) and opposite body (30) would destroy capillary action as necessary to prevent flow within a certain part of the recess while maintaining flow in the guideways (see COL. 11, lines 52-65). The ideal combination of the width and depth of the recesses would offer better control over capillary flow of liquid along predetermined paths along the structures forming the liquid guideways rather than the whole of the recesses, ensuring predictable and controlled flow rates in defined areas (see COL. 1, lines 58-68; COL. 2, lines 1-45). Columbus also discloses the structural limitations of claims 1, 4-8, 10-15. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kim et al. to provide a device with a width of at least 1000 microns and depth of at least 1500 microns as in Columbus given the diverse range of widths and depths as well as to better control capillary flow of liquid along predetermined paths with predictable and controlled flow rates in defined areas. Applicant is reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim.

Referring to claim 13, neither Kim et al. nor Columbus disclose each capillary gap provided with a discrete liquid supply means. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

device of Kim et al. in view of Columbus to provide discrete liquid supply means for each capillary gap to prevent contamination of the liquid in each capillary gap from not thoroughly cleaning a liquid supply means between providing capillary gaps with liquid.

37. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/33737 to Kim et al. in view of U.S. Patent No. 4,233,029 to Columbus as applied to claims 1, 3-8, and 10-15 above, and further in view of U.S. Patent No. 5,681, 484 to Zanzucchi et al.

Referring to claim 16, Kim et al. in view of Columbus do not disclose bio-chips used as the support plates. However, Zanzucchi et al. disclose channels and wells formed in a suitable dielectric substrate using maskless semiconductor patterning techniques (see COL. 2, lines 25-67). The microlaboratory arrays can be fully automated for rapid transfer of samples, precursors, and other movement of fluids into the array from one well to another while allowing measurement of assays and complete control of processing parameters (see COL. 3, lines 1-27). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kim et al. in view of Columbus to use bio-chips as the support plates as in Zanzucchi et al. to allow automation, measurement of assays, and complete control of processing parameters.

38. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/33737 to Kim et al. in view of U.S. Patent No. 4,233,029 to Columbus as applied to claims 1, 3-8, and 10-15 above, and further in view of U.S. Patent No. 5,772,966 to Maracas et al.

Referring to claim 16, Kim et al. in view of Columbus do not disclose microtiter plates used as the support plates. However, Maracas et al. disclose that standard

microplates may be used (see COL. 14, lines 54-65; COL. 21, lines 34-42). Moreover, it is very well known in this art to use microplates. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Kim et al. in view of Columbus to use microtiter plates as the support plates as in Maracas et al. as it is commercially available.

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They include one or more limitations in the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (703) 305-1947. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (703) 308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 879-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elizabeth Quan
Examiner
Art Unit 1743

eq
December 14, 2002

Jill Warden
Supervisory Patent Examiner
Technology Center 1700